

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A range sensing system comprising~~which includes~~:
at least one energy source adapted to emit energy capable of reflection by one or more targets within a region, ~~and~~
at least one receiver adapted to sense the reflection of emitted energy from said at least one target within said region, ~~and~~
an activation system associated with said at least one energy source, said activation system being adapted to activate and deactivate an energy source in a cycle pattern with a selected source frequency, and
a shielding system associated with said at least one receiver, said shielding system being adapted to block the sensing of reflected energy from a target by a receiver, said shielding system being activated and deactivated in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequencies being selected from different frequency values,
wherein an output signal of said at least one [a] receiver is compared with a reference signal to determine a range value for a selected target of the receiver, where phase differences between the receiver signal and reference signal indicate a range value.
2. (Original) A range sensing system as claimed in claim 1 adapted to indicate range values for a plurality of targets within a region.
3. (Currently Amended) A range sensing system as claimed in claim 1 ~~or claim 2~~
wherein the source frequency used is phase locked with respect to the receiver frequency used.

4. (Currently Amended) A range sensing system as claimed in claim 1 ~~[[3]]~~ wherein a single signal generator generates a receiver frequency which is phase locked with respect to a source frequency generated by the same signal generator.

5. (Currently Amended) A range sensing system as claimed in claim 2 ~~claims 2 to 4~~ wherein an output signal of a receiver has a frequency equal to the frequency difference between a source frequency and a receiver frequency.

6. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein said at least one energy source is activated and said at least one receiver is shielded using a plurality of paired source and receiver frequencies.

7. (Original) A range sensing system as claimed in claim 6 wherein a receiver is adapted to emit a plurality of output signals in response to the use of said plurality of paired sets of source and received frequencies.

8. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 which includes a single energy source only with a diffuse emission pattern.

9. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein an energy source is formed from a light emitting diode.

10. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein an energy source emits visible light energy.

11. (Original) A range sensing system as claimed in claim 10 wherein a receiver is formed from a light sensitive transducer.

12. (Original) A range sensing system as claimed in claim 11 wherein the receiver is formed from or implemented by a charged coupled device.

13. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the range sensing system includes a single receiver only.

14. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the activation system controls the supply of power to an energy source.

15. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the shielding system is implemented through a physical barrier.

16. (Currently Amended) A range sensing system as claimed in claim 1 ~~claims 1 to 15~~ wherein the shielding system is implemented through an enable signal applied to operate a receiver.

17. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the reference signal is generated by mixing the receiver frequency and the source frequency.

18. (Currently Amended) A range sensing system as claimed in claim 1 ~~claims 1 to 17~~ wherein the reference signal is generated through a calibration procedure.

19. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the range sensing system includes a processing means adapted to compare an output signal of the receiver to a reference signal.

20. (Original) A range sensing system as claimed in claim 19 wherein the processing means is a computer system.

21. (Currently Amended) A method of calculating a range to a target within a region, ~~comprising~~ characterised by the steps of:

(i) activating an energy source using an activation system, said energy source being activated and deactivated in a cyclic pattern with a selected source frequency, and

(ii) operating a receiver using a shielding system, said shielding system being adapted to block the sensing of reflected energy from a target in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequency being selected from different frequency values, and

(iii) comparing a receiver output signal with a reference signal to determine a range value for said target, where phase differences between the receiver output signal and reference signal indicate a range value.

22. (Original) A method of calculating a range to a target within a region as claimed in claim 21 wherein the energy source is activated and the receiver is shielded using a plurality of paired source and receiver frequencies.

23. Cancelled.

24. Cancelled.